

Supplier Document Status Stamp

BSC	A. Records Designator: <input type="checkbox"/> QA: QA <input checked="" type="checkbox"/> QA: N/A B. Procurement Document No. <u>NN-HC4-00239</u> C. BSC Standard Document No. <u>V0-HX00-NHC4-00239-00151-001-002</u>												
D. SUPPLIER DOCUMENT STATUS													
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H. <u>William Barfield</u> <u>William Barfield</u> <u>9/1/08</u> RESPONSIBLE ENGINEER/ANALYST (Printed Name and Signature) DATE													

Title: Technical Memo: Construction Cost Escalation from 2005 to 2008 Dollars

Supplier Document #: N/A

Supplier Rev.: 01

Supplier Date: 03/27/2008

BSC**Supplier Document Distribution**QA: N/A

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Complete only applicable items.

1. Supplier/Subcontractor Name: Nevada Rail Partners		Purchase Order/Subcontract No. and Title: NN-HC4-00239/Construction Cost			
2. BSC Submittal No.: V0-HX00-NHC4-00239-00151-001		Revision: 002	Title: Technical Memo: Costruction Cost Escalation from 2005 to 2008 Dollars		
Responsible Individual: <u>William Garfield</u> Name (Print)		WG Initials	<u>423</u> Mailstop	<u>04/01/08</u> Date	<u>04/10/08</u> Due Date

DISTRIBUTION					
Discipline/Organizations	Abbrev.*	3. Name	Mailstop	4. For Review	5. After Acceptance
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6. Document transmitted contains OUO information? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					

* Use these abbreviations on the Supplier Document Status stamp to indicate reviewers.

BSC

Transportation Data Pedigree Form

QA: N/A

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Complete only applicable items.

4-1-08

Subcontractor: N/A	Item Number/Title/Revision: Technical Memo: Construction Cost Escalation from 2005 to 2008 Dollars Rev 01	Submittal Date: 3/27/2008	SRCT No.: 08-00076
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Section I. Submittal Information (includes above information)

Submittal Description and Revision Summary for Entire Submittal:

The purpose of this technical memo is to provide an escalation of the construction cost estimate for the Mina and Caliente Corridors for 2005 dollars to 2008 dollars. Revision 1 to this Technical Memo corrects an error in supporting information that has no bearing on the escalation calculation. The memo presents the cost escalation data for the Mina Corridor in tabular form. A column in the table labeled 'Percent of Total Cost' contained incorrect data that was corrected in Revision 1.

Special Instructions:

Cross-reference to T07-00142 Comparative Cost Estimates Mina Rail Corridor Summary Report, Rev. 01 Jul 23, 2007 (ENG.20070725.0020) and T07-00141 Comparative Cost Estimates Caliente Rail Corridor Summary Report, Rev. 00 July 3, 2007 (ENG20070724.0017).

Section II. Data File Information (Add lines below if needed for additional files. Indicate "Last item" or "End of list" after last line used.)

Filename	Rev.	File Size	Description (File description and revision summary for file)	Application and Version/ Add-in or Extension and Version
Tech Memo Cost Escalation Rev1 080327.doc	01	42 KB	Technical memo to provide an escalation of construction cost estimates for the Mina and Caliente Corridors Revision 01	Microsoft Word Document

*****Last Item*****

Section III. Metadata

☐ GIS Metadata

All GIS data is preferred in ArcGIS9.1 UTM, NAD1983, Zone11, Feet.

Projection:

Datum:

Zone:

Units:

☐ CAD Metadata

CAD drawings are preferred in Bentley MicroStation V8 and/or InRoads and should adhere to established CAD standards.


Level descriptions:

Scale:

Units of Measurement:

Horizontal and Vertical Datum:

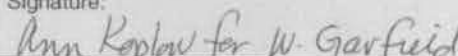
Section IV. Data Screening (Completed by BSC personnel)

Acceptable for Review? <input checked="" type="checkbox"/> Yes* <input type="checkbox"/> No	Screener Name: Cathy Stettler	Signature: 	Date: 3/28/08
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*If "Yes", Data Storage Location: nvtdat\NRP\Task 17 Cost Estimating Support\08-00076 Construction Cost Escalation 05_08 Rev 01 03-27-08

Comments: (Justification for returning submittal is **required**; other comments are optional.)

Section V. STR/STR Support Disposition of Submittal

Process for Review? <input type="checkbox"/> Yes <input type="checkbox"/> No**	** If "No", date returned:	Comments:
STR/STR Support Name: William Garfield	Signature: 	Date: 3/28/08

TECHNICAL MEMO

Title: Construction Cost Escalation from 2005 to 2008 Dollars

From: William L. Garfield
Bechtel SAIC

To: Mike West
Potomac-Hudson Engineering

Date Created: 03/27/2008

Purpose and Scope

The purpose of this Technical Memo is to provide an escalation of the construction cost estimate for the Mina and Caliente Corridors from 2005 dollars to 2008 dollars.

The estimated cost of the Caliente Corridor and the estimated cost of the Mina Corridor are provided in the following documents:

- Comparative Cost Estimates Mina Rail Corridor Summary Report, Rev. 01 July 23, 2007. NRP (DIRS 182778)
- Comparative Cost Estimates Caliente Rail Corridor Summary Report, Rev. 00 July 3, 2007. NRP (DIRS 182777)

The above reports provide cost estimates for the respective corridor in 2005 dollars. This technical memo provides escalation factors that present corridor costs in 2008 dollars.

Development of Escalation Indices

The escalation is based on Global Insight's 3rd Quarter 2007 Forecast. This forecast contains numerous indices covering a broad range of industry segments, commodity groups, and labor categories. To support the escalation of the Nevada Infrastructure Project, three indices were selected to reflect the anticipated cost increase as follows:

CCIH&ST - Highway Construction Cost Index (1997=1.000). This index reflects the costs of linear projects that involve earthworks, bridge and drainage structures. For the purpose of the Nevada Rail Line, this index was applied to costs associated with earthworks, bridges, drainage structures, signaling, communications, and ROW / land acquisition.

CCI13NS - ENR Construction Cost Index (1913=1.000). This index reflects costs associated with the facilities portion of the rail line. For the purpose of the Nevada Rail Line, this index was applied to cost associated with facilities including the interchange yard, REMY, and maintenance of way facilities.

ECIPCPARNS - Compensation, Professional and Related. This index is an employment cost index that reflects cost escalation associated project management and professional staff. For the purpose of the

Nevada Rail Line, this index was applied to costs associated with project management, engineering, and technical support staff.

Summary of Cost Escalation:

Using the cost escalation indices described above, the escalation rate for each cost element is derived by dividing the 2008 index value by the 2005 index value yielding the results shown in the following table:

$$\text{Escalation} = 100 * [1 - (\text{2008 index} / \text{2005 index})]$$

Index Name	CCIH&ST	CCI13NS	ECIPCARNS
Index Value (2005)	1.179	74.46	99.08
Index Value (2008)	1.392	81.15	109.76
Escalation Factor (%)	18.1%	9.0%	10.78%

Application of Indices to Caliente Corridor Cost:

The escalated rate for the Caliente Corridor is derived by applying the escalation rate to the proportionate cost from each of the three cost categories as shown in the following table:

Cost Category	Percent of Total Cost	2005 Dollars	Escalation Rate	2008 Dollars
Professional and Management Staff	9.40%	206,202,000	10.78%	228,430,576
Linear Construction Cost	86.50%	1,896,798,000	18.10%	2,240,118,438
Facilities Construction Cost	4.10%	89,849,000	9.00%	97,935,410
Total Cost	100.00%	\$ 2,192,849,000	17.04%	\$ 2,566,484,424

The 17.04% escalation rate shown above is a composite escalation rate derived from the three cost escalation components.

Application of Indices to Mina Corridor Cost:

The escalated rate for the Mina Corridor is derived by applying the escalation rate to the proportionate cost from each of the three cost categories as shown in the following table:

Cost Category	Percent of Total Cost	2005 Dollars	Escalation Rate	2008 Dollars
Professional and Management Staff	9.06%	157,421,000	10.78%	174,390,984
Linear Construction Cost	86.33%	1,500,626,000	18.10%	1,772,239,306
Facilities Construction Cost	4.61%	80,063,000	9.00%	87,268,670
Total Cost	100.00%	\$ 1,738,110,000	17.02%	\$ 2,033,898,960

The 17.02% escalation rate shown above is a composite escalation rate derived from the three cost escalation components.

Summary:

This Technical Memo provides an escalation of the construction cost estimate for the Mina and Caliente Corridors from 2005 dollars to 2008 dollars. The cost escalation is calculated based on a composite

escalation derived from three indices. These indices reflect anticipated escalations in the cost of linear construction projects, construction of fixed facilities, and professional services.

Based on the analysis presented in this memo, it is recommended that the 2005 dollar cost for the Caliente Corridor be escalated by 17.04% to \$2.57 billion in 2008 dollars. Likewise, the 2005 dollar cost for the Mina Corridor should be escalated by 17.02% to \$2.03 billion in 2008 dollars.